

Copyrightability of LLM-Generated Code

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Goals for this session



- Understand legal principles behind copyright
- Understand how to apply this to your own activities (esp. if encountering LLMs)

Copyright

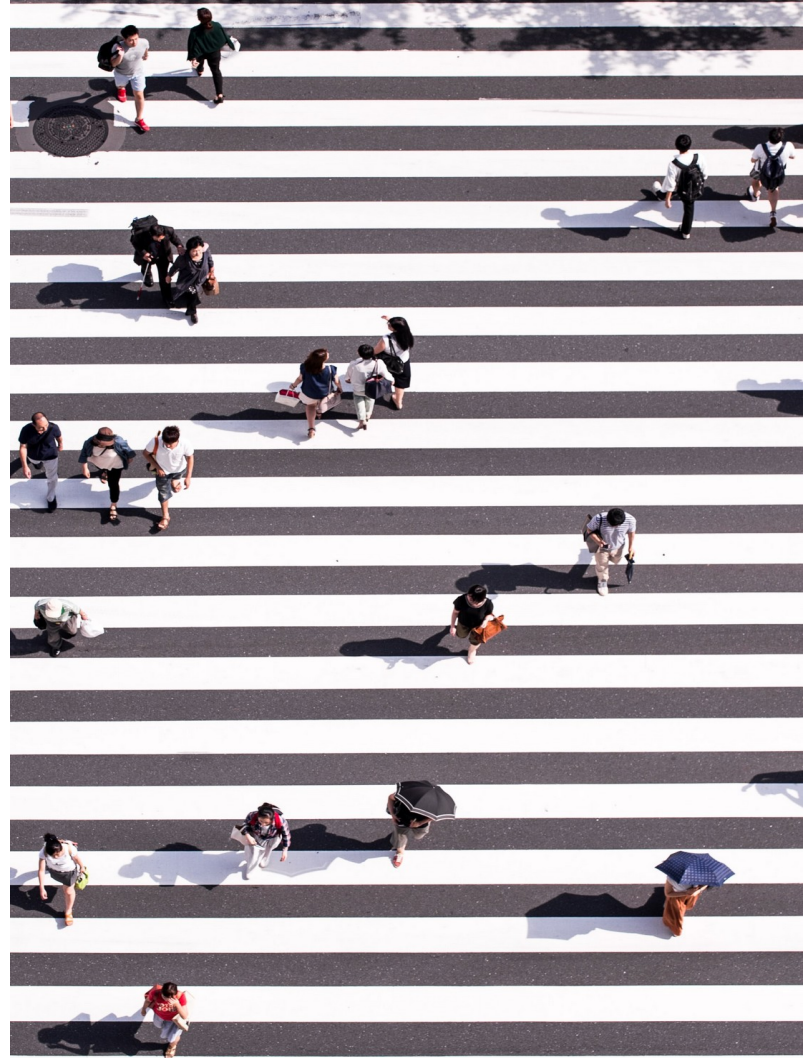
Copyright grants the author of a creative work exclusive rights over that work. Copyright is considered a property right, and can be transferred to someone else.

Copyright means only the copyright owner can:

- Make copies of the work
- Distribute the work
- Modify the work
- Make the work publicly available



Copyright applies by default



What is a License?



A license is an official permission granted to do, use, or own something.

In the context of software:

- Defines the terms under which the user is allowed to use the software.
- If the terms allow for the enjoyment of the Four Freedoms, it is a Free Software license.

Important Principles to Remember

- Copyright originates in the person who created the work.
- Copyright does not apply to ideas, but only to expressions and implementations.



Naruto



Naruto, David Slater, and Copyright



In 2011, nature photographer David Slater released a series of photographs, including this photo of Naruto:

- Selfies that Naruto and other monkeys had taken themselves.
- Wikimedia and Techdirt hosted these photos without Slater's consent.
- Slater argued that he has copyright over these photos.
- Wikimedia and Techdirt argued that copyright only originates with "natural person" authors.

Only a **NATURAL PERSON** can be an **AUTHOR**

- Most legal jurisdictions agree only a human being (NATURAL PERSON) can be considered an AUTHOR
- Important to distinguish between an AUTHOR and a COPYRIGHT HOLDER.
- Copyright can be transferred
- Authors often choose to transfer copyright to non-natural persons (e.g. a corporation).



Implications for non-human created work



- Photo of Naruto is not considered to be human created/authored by a natural person.
- This has implications for LLM-generated work.
- Entirely LLM-generated work cannot be copyrightable as there is no natural-person author.

Implications for non-human created work



US Copyright Office

"The crucial questions is:

- (1) whether the work is basically one of human authorship, with the computer merely being an assisting instrument; or*
- (2) whether the traditional elements of authorship in the work were actually conceived and executed not by a man, but by a machine."*

Only a **NATURAL PERSON** can be an author

Currently, strong indications in Europe that copyright does not apply to purely LLM-generated works

- Only natural person can be considered an author, affirmed by the Court of Justice of the EU in a number of cases.
- Majority of member states agreed in Council of Europe meeting in 2024 that current EU copyright principles already address the LLM copyrightability question.
- Local courts have also agreed that copyright originates in the “creative activity of a natural person”.



Only a **NATURAL PERSON** can be an author

Court of Justice of the European Union

- Infopaq International A/S v Danske Dagblades Forening (Denmark)
- Eva-Maria Painer v Standard VerlagsGmbH and Others (Austria)

Local case law in the Czech Republic and Germany have also agreed that the copyright standard is the „creative activity of a natural person“.



Exceptions in the UK and Ireland

United Kingdom

Copyright, Designs, and Patents Act of 1988, Section 9(3)

- *“[i]n the case of a literary, dramatic, musical, or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”*

Republic of Ireland

Copyright and Related Rights Act 2000, Section 21(f)

- *“in the case of a work which is computer-generated, the person by whom the arrangements necessary for the creation of the work are undertaken.”*

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Copyright protects the expression, not the idea



The Idea-Expression Dichotomy



- Copyright only covers an author's creative implementation
- Copyright does not apply to ideas.

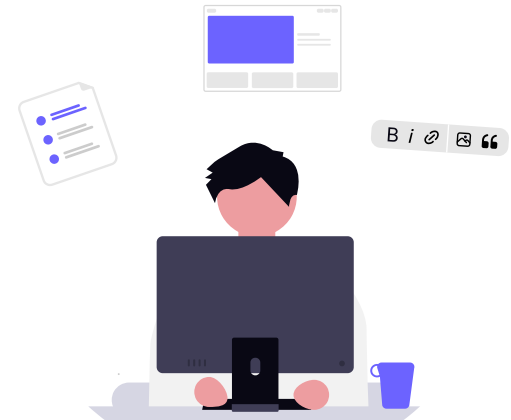
The Idea-Expression Dichotomy



- Assumption under copyright law is that implementation is the difficult part
- Traditionally this is why copyright law places legal status on implementation
- LLMs disrupt the traditional workflow of idea-expression

Prompts Are Insufficient For Copyright Over Output

- Prompts are generally viewed to be instructions that convey ideas.
- Prompts are generally not sufficient to allow users to be recognized as authors of the resulting output.
 - (Community for Creative Non-Violence v. Reid)
- Prompts CAN be copyrightable themselves, but would be considered separate from the output.



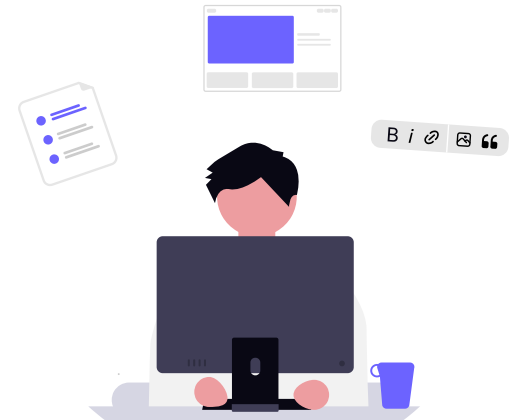
Community for Creative Non-Violence v. Reid



Third World America – A Contemporary Nativity, by James Earl Reid

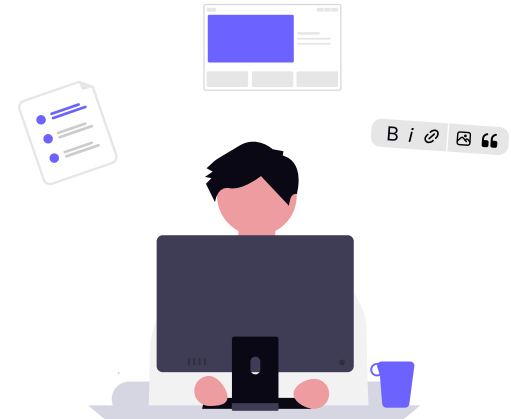
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Prompts Are Insufficient For Copyright Over Output

- Municipal Court of Prague:
 - Writing a prompt to wholly generate a work cannot generally amount to authorship under copyright law.
- Munich District Court:
 - Progressive attempts of the user during the prompting process may lead to output that reflects their personality.



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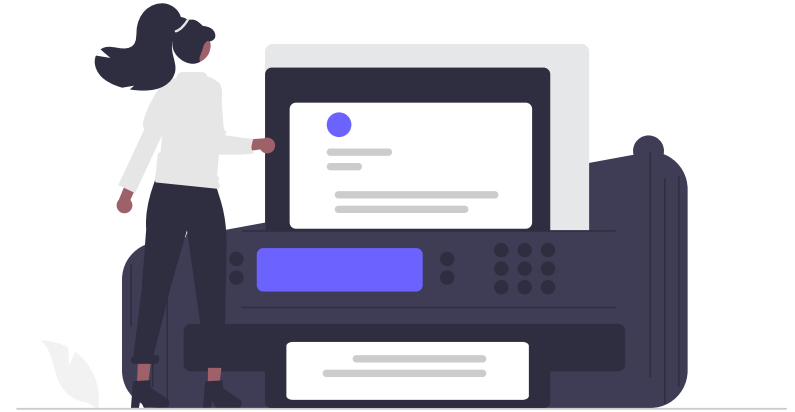
Public Domain

- If something cannot have copyright applied to it, it is in the public domain.
- In the case of software, this means no one has the rights to apply any kind of license, including copyleft license terms.
- But in practice, things are not that simple: in most cases, LLM-generated output forms only part of the creative work, with human input forming the other part.

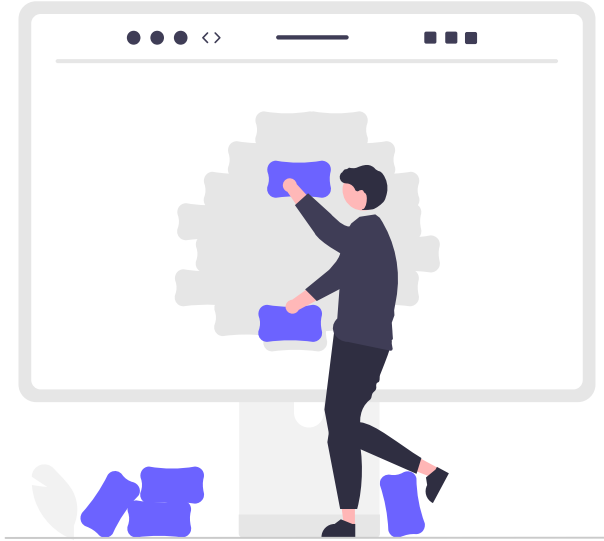


Machine Modification of Original Input

- Copyright can be recognized if the output can be identified to some degree as being a derivative of original input.
- Many people use LLMs to amend their own human created works.
- Especially with source code:
 - Human created inputs tend to result in a limited range of what the modified output can look like
 - This allows the output to retain the characteristics of its human authorship.

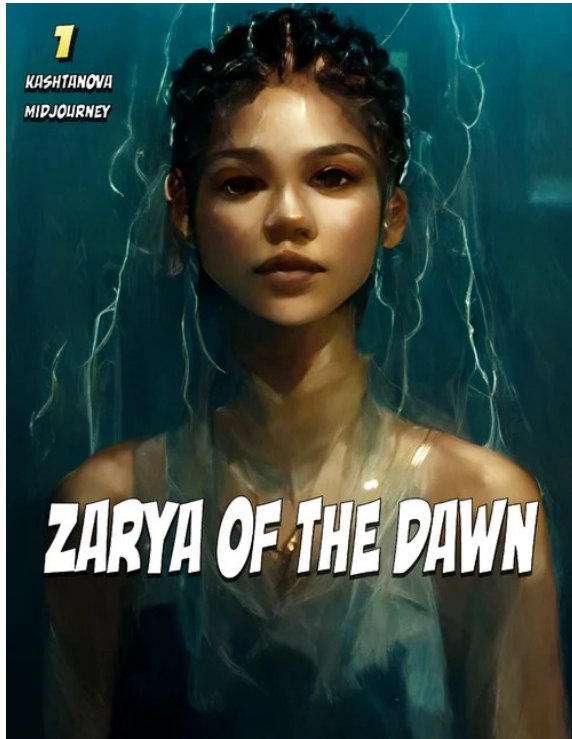


Modification or Rearrangement of Generated Output



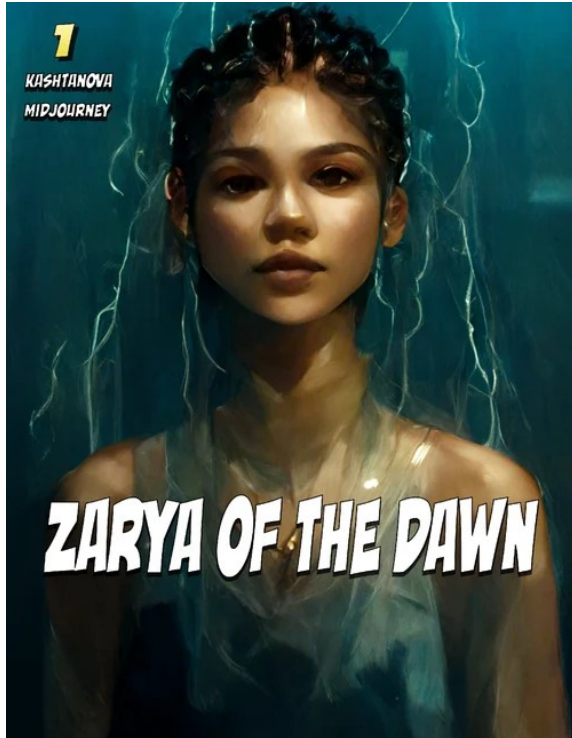
- The non-copyrightability of individual elements in an overall work does not prevent that work from being copyrightable under the law.
- LLM produced software elements are often used as building blocks.
- Generating output with LLMs is often an initial or intermediate step.

“Zarya of the Dawn” by Kris Kashtanova



- All images in the comic book were generated by Midjourney.
- Story and text were written by Kashtanova herself.
- Individual components can be non-copyrightable and in the public domain, while the whole can be considered a copyrightable arrangement/work that includes public domain components.
- The text and overall arrangement of components in the book was therefore copyrightable, while each individual image was not.

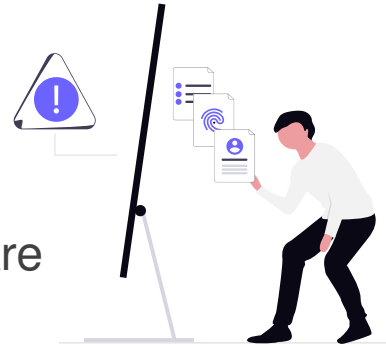
“Zarya of the Dawn” by Kris Kashtanova



- Similar to a comic book, software elements produced by LLMs are often used as building blocks for a larger work.
- The compilation, arrangement, and internal structure of a software program can be considered creative enough if it was implemented by a human developer to have copyright recognized.

Copyright Infringement

- Infringement: when the tool reproduces something that is already copyrighted, or close enough to something already copyrighted.
- “I did not know” is not a valid defense against copyright infringement.
- Liability generally falls on the person who distributes it (i.e. the user).
- The legal principles relating to LLMs are still evolving:
 - *Author’s Guild et al v OpenAI (USA)*
 - Evaluation of whether the productions of copyrighted works by LLMs are considered “derivative works” or replications.



Is a new legal framework needed?

PIERRE MENARD, AUTOR DEL QUIJOTE,
DE JORGE LUIS BORGES,
A LA LUZ DE LAS TEORÍAS SEMIÓTICAS

VICENTE JESÚS FIGUEROA ARENCIBIA
Universidad de Santiago de Cuba

"El que lee mis palabras está inventándolas"

*"Un libro es más que una estructura verbal...
es el diálogo que entabla con su lector ...
Y este diálogo es infinito ..."*

J.L. Borges
Otras Inquisiciones

La literatura de J.L. Borges es considerada, con todo derecho, una de las más universales y asombrosas de este siglo. No han faltado epítetos para referirse a su contravertida figura, atacada por unos y elogiada por otros. Sin embargo, es indudable el reconocimiento que ha tenido la obra borgiana, incluso por parte de sus detractores y de los menos avezados lectores.

El presente trabajo sólo se propone un primer acercamiento a la difícil narrativa de J.L. Borges, en la que encontramos todo tipo de filosofías, de cuestiones metalísicas y de inquisiciones sobre el universo. Hay

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